

Title: Method of Calculating Shading Correction Coefficients of Imaging Systems from Non-Uniform and Unknown Calibration Standards

ABSTRACT

A method of calculating shading correction coefficients for an imaging system from a non-uniform and unknown calibration standard is disclosed. The standard may be of two or more dimensions and divided into several parts. The standard is imaged in an initial position to obtain a set of initial image intensities corresponding to defined regions on the standard. The standard is then repositioned and imaged in one additional re-arrangement for each of its dimensions. For each re-arrangement, a set of re-arranged image intensities are obtained. The initial and re-arranged image intensities are combined mathematically to determine a shading error for each of the defined regions, based on a value selected for one or more of the shading errors. The shading errors are inverted to provide a set of shading correction coefficients. Either of the shading errors or the shading correction coefficients may be normalized to eliminate the effect of the selected value. Calculation errors in the system may be reduced by calculating shading errors based on two or more calibration standards and then calculating a mean or weighted average shading error for each defined region.